Recently, greater focus has been placed on primary prevention of cardiovascular disease. National guidelines aim at improving modifiable risk factors with lifestyle changes and pharmacologic therapy. Increased public policy efforts further aim to delay a first cardiovascular event. We utilized the Get With The Guidelines (GWTG)-Coronary Artery Disease (CAD) registry to evaluate change in risk factor profile over time of patients without known CAD presenting with their first episode of myocardial infarction (MI).

Background

Study Population

- 276,540 patients in 435 hospitals in the United States between January 1, 2002 and December 31, 2008 in GWTG-CAD registry
- Exclusion criteria: Known CAD, MI, percutaneous coronary intervention, coronary artery bypass graft surgery, stroke, transient ischemic attack, or peripheral artery disease (n=106,051)
- Presentation other than an acute MI (n=68,880)
- Inconsistent data on diagnosis of non-ST-segment elevation MI (NSTEMI) versus ST-segment elevation MI (STEMI) (n=725)
- Final study cohort of 100,884 patients without known CAD presenting with first episode of MI at 408 hospitals

Statistical Analyses

- Cochran-Mantel-Haenszel test for time trend
- Non-zero correlation statistic for continuous variables
- Row-mean score statistic for categorical variables
- Logistic regression analyses of risk factors
- Generalized estimating equations used to account for within-hospital clustering
- Variables included in the model are calendar year, NSTEMI versus STEMI groups, interaction between calendar years and NSTEMI vs STEMI groups
- For modifiable risk factors, age and gender adjusted multivariable logistic regression analyses performed

Limitations

- Retrospective analysis
- Includes only patients hospitalized with AMI and hospitals participating in GWTG
- Selection bias and survival time bias
- No data on family history of premature CAD, impaired glucose tolerance, and pre-hospital medications

Conclusions

- While risk factor profiles in patients presenting with first MI have shown slight improvements over time, the changes are modest.
- More data is needed to understand where the disparities in risk factor modification and prevention of cardiovascular disease lie

Funding Sources

- B. Shah partially funded by NIH/NHLBI grant (T32HL098129-2012; UL1 TR000038-2013)
- Data analysis performed by the GWTG Data Coordinating Center at DCRI and supported by AHA Young Investigator Database Seed Grant